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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/796,440 | 03/09/2004 | Bruce Richard Crain | NORT 64197 | 1812 |

7590 01/25/2007
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| EXAMINER |
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MANCUSO, HUEDUNG XUAN CAO

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| ART UNIT | PAPER NUMBER |
| 2821 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/25/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/796,440

Applicant(s)

CRAIN ET AL.

Examiner

Huedung Cao Mancuso

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3,7,8 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5, 6, and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aisenbrey (US 2002/0109634 A1) in view of Sanz (US 2004/0262453 A1) and further in view of Rivera et al. (US 6,047,925).

Regarding claims 1, and 12, Aisenbrey (figure 10A) teaches a conformal load-bearing antenna assembly, comprising: a pan shaped 108 to fit within an aircraft window opening see paragraph [0052]; an antenna element 110 disposed within the pan see figure 10A; a connection for coupling a signal to the antenna element; a radio frequency connector mounted in the pan which Aisenbrey does not explicitly disclose which Aisenbrey does not explicitly disclose. However, it is inherent that in order for the antenna to perform its function, the connector is required for connecting a signal to the antenna. Furthermore, Aisenbrey does not disclose a pan providing structural rigidity as claimed. However, Sanz teaches that such pan providing structural rigidity is widely used in the art (Sanz, paragraph [0021]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Alt's antenna system with a pan providing structural rigidity, as taught by Sanz in order to have a good antenna

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structure. Also, both Aisenbrey and Sanz do not explicitly disclose a conductive gasket positioned adjacent to the perimeter of the antenna element, electrically bonding the antenna to an aircraft fuselage and providing a pressure seal. Rivera teaches such conductive gasket is well known in the art see Rivera (col. 3, lines 4-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Aisenbrey's antenna system with that conductive gasket, as taught by Rivera in order to have a good antenna structure.

Claims 2, and 9 add into claim 1, wherein the antenna element comprises a stripline supported by dielectric sheet, and at least one radiating element couple to stripline see abstract.

Claims 5, 6, 10, 11, and 13 add into claim 1, wherein the pan forms a pressure seal with the aircraft window opening, cavity behind the antenna element, a pressure seal over window opening; and a pan is structural replacement for a window plug; a bonding strap for carrying lightning currents from the antenna structure to a fuselage of the aircraft which Aisenbrey does not explicitly disclose. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pressure seal in order to hold the window from blowing away; and a bonding strap because conventional airplane would have a mechanism to handle lightning or thunder to prevent electrical damage to the on board electronic such as cockpit instrument.

Allowable Subject Matter

3. Claims 3, and 7-8 are allowed.

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The following is a statement of reasons for the indication of allowable subject matter: the Prior Art fails to teach that the antenna element further comprises a front ground plane and a back ground plane, with the front ground forming with one or more slots adjacent to the radiating element.

Due to the new ground of rejection this action made NON-FINAL.

Inquiries

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Mancuso whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Mancuso
Patent Examiner

